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ABSTRACT

Although the concept of educational specifications for planning school buildings has been discussed over a long period of time and has found its way into virtually every facility's planning publication in the last 20 years, there remains a considerable lack of understanding of what educational specifications should include and how they should be applied. This bulletin is intended to provide a more complete definition of educational specifications and to assist local school districts in communicating their district programs and needs to their architects in the most clear and concise manner so that the most functional designs can result for each given situation. Guidelines are provided by summarizing the information -- educational specifications -- needed by the architect designing a facility. Suggested first is a specification outline that covers background information (educational goals and philosophy, learning environment, and available funds), school population characteristics, the educational program (including summer programs), auxiliary services, and the physical features of building and site. Each of these major items is then explored specifically within the context of working specifications. A 28-item selected bibliography is included. (Author/MLF)

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EDUCATIONAL SPECIFICATIONS

EDUCATIONAL FACILITY SERIES

A GUIDE TO PLANNING

STATE OF NEW JERSEY
DEPARTMENT OF EDUCATION
FIELD SERVICES DIVISION
BUREAU OF FACILITY PLANNING SERVICES
TRENTON NEW JERSEY

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EDUCATIONAL SPECIFICATIONS

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1973

Carl L. Marburger, Commissioner of Education
John Rosser, Director, Division of Field Services
Edward A. Spare, Director, Facility Planning Services

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FOREWORD

Although the concept of educational specifications for planning school buildings has been discussed over a long period of time and has found its way into virtually every facilities planning publication in the last 20 years, there remains a considerable lack of understanding. Not only is there lack of understanding in what educational specifications should include, but there is also a lack of understanding in their application.

When the 1969 edition of the New Jersey Guide for Schoolhouse Planning and Construction mandated the inclusion of educational specifications with all "schematic" plan submissions, it was done to encourage more forethought by school administators prior to the design stage in planning school buildings, and also to provide State plan reviewers with information regarding the educational program to assist them in making a more intelligent educational review of plans submitted for approval. Since that time, there have been numerous requests to explain what educational specifications are, beyond the brief definition which was included in the Guide (Section 106). This bulletin is intended to provide a more complete definition of educational specifications and to assist local school districts in planning educational facilities. This is not a required format to be used in all proposed school construction programs in New Jersey, but is designed to assist local school districts in communicating their district programs and needs to their architects in the most clear and concise manner so the most functional designs can result for each given situation.

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DEFINITION OF EDUCATIONAL SPECIFICATIONS

The term "Educational Specifications" has been defined by a number of people and in a number of ways. A consensus of opinion on the subject suggests the following brief definition:

> *Educational specificiations are statements which specify to an architect what is to be required of a proposed educational facility to implement a specific educational program in the most efficient and effective way.*

It should be noted first of all, from the above definition, that educational specifications are not the same as master plans. Master planning for educational facilities is a study of an entire school system with regard to facilities needed in the future, particularly until such a time that all land in the community is developed and there is no longer any significant growth anticipated in the school population. A complete master plan will provide a basis for educational specifications for each existing and proposed school in the community in terms of numbers of pupils to be housed and the philosophy and program of learning to be implemented. The master plan is not, however, a substitute for educational specifications.

It should be clear also from the above definition that educational specifications are needed as much, if not more, for school modernization programs as for new buildings and additions.

WHAT TO INCLUDE

Educational specifications are developed for <u>each</u> building program to best give the architect of the project directions with regard to the occupants of the building and the activities to take place in and around the school building. A possible <u>outline</u> to follow in writing educational specifications for a specific building project is as follows:

I. Background Information

___A. Educational goals and aspirations of the community
___B. Philosophy of the teaching-learning process.
___C. Desired environment for learning.
___D. Funds available for project.

II. School Population Characteristics

___A. Age and grade organization of pupils.
___B. Number of pupils (at time construction is complete and maximum number anticipated for this school).
___C. Physical and mental handicaps anticipated—types and numbers of pupils.
___D. Extent of adult use evenings, weekends, holidays and summers.
___E. Numbers of administrators, faculty and staff.

III. Educational Program (Summer as well as school year)

___A. Curricular experiences and activities (indoor and outdoor).
___B. Co-curricular experiences and activities (indoor and outdoor).
___C. Frequency and duration of each educational experience and activity (daily, weekly, monthly, and annual schedule).

___D. Number of instructional spaces needed for each activity (based on total number of pupils involved during any given time period, number of pupils in each group, and time schedule of activities).

___E. Unique teaching-learning methods to be used.

___F. Educational technology (audio-visual equipment, special areas, and teaching machines) to be utilized.

IV. Auxiliary Services

___A. Administrative organization.
___B. Health services.
___C. Guidance program.
___D. Special services program.
___E. Food services.
___F. Faculty activities.
___G. Numbers and kinds of auxiliary spaces needed.

V. Physical Features of Building and Site

___A. Site size and location.
___B. Kinds, orientation, and unique physical features of outdoor spaces (including utilities and parking) needed on site.

___C. *Kinds, number, orientation and floor area of instructional and ancillary spaces inside building. (See School Capacity bulletin.)*

___D. *Unique features desired in each space (ceiling height, light control, ventilation, furniture, equipment, utilities, acoustical requirements, temperature and humidity controls, color, floor materials, flexibility, intercom, and electronic data retrieval terminals—audio and visual).*

___E. *Aesthetic features and provisions for health, safety, comfort and enjoyment of occupants.*

___F. *Features necessary for efficiency of operation and ease of maintenance.*

Future Expansions, Adaptability and Flexibility of Space

___A. *Anticipated additions.*

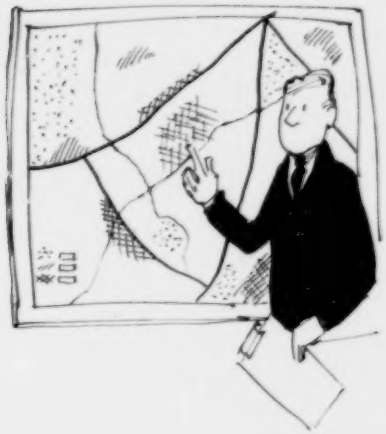
___B. *Possible changes in the educational program and teaching-learning methods and activities.*

It should be evident from the above list that a number of decisions must be made prior to the actual writing of educational specifications. The local board of education and chief school administrator should determine how these decisions are made. A citizens' committee might be organized to make decisions regarding community growth, goals, aspirations, and the financing and use of new facilities. Teachers and students might also be organized to define all aspects of the educational program and the kinds of spaces needed. Educational and architectural consultants (including N.J. State Department of Education personnel) should be consulted to evaluate existing facilities and make recommendations regarding sites and buildings. It is questionable whether all of these decisions can or should be made by central office personnel alone, or even by an outside consultant on his own.

The educational specifications then become a compilation of all the decisions which have been made affecting the planning of educational facilities. This information is then given to the architect, who has been selected by the Board to design a facility.

BACKGROUND INFORMATION

Before a planning team can progress in planning educational programs and facilities, it must have some idea of what community members consider to be the purpose of the school, particularly in communities where the funding of capital projects must be approved by the electorate. The schools are in existence to serve society; the curriculum, therefore, must be in harmony with the goals and aspirations of the local citizens as well as the state and nation. Slight variations between communities in their emphasis on creativity, appreciation of the fine arts, development of research skills, development of skills in the practical arts, athletic competition, environmental education, and other curricular areas can lead to considerably different educational facilities. The overall educational programs may be similar, but due to different emphasis, the kinds of spaces provided could vary greatly. The ability and willingness to pay for good facilities is also a significant factor which an architect must know in order to design the most functional and realistic facility for the community involved.



POPULATION CHARACTERISTICS

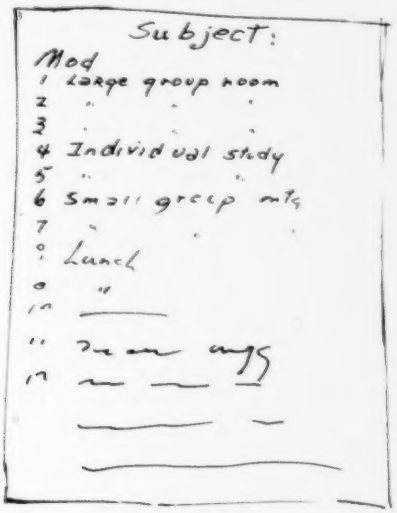
For a specific building program, data must be compiled regarding pupils to be housed in the building in the immediate and distant future. This presupposes a district master plan for educational facilities based on an accurate enrollment projection and anticipated educational program. The master plan as well as the educational specifications, should state the following:

1. *Pupil ages.*
2. *Grade levels and number of grades*
3. *Categories of special education students anticipated.*
4. *Specific schools particular handicapped students will attend.*

A decision must then be made by the Board of Education and the administration as to the numbers of administrators, faculty and staff needed for the building. It is also necessary to know from the Board of Education and other community agencies the extent of use the building will receive from community groups in adult education, health services, and/or recreational programs.

EDUCATIONAL PROGRAM

Obviously the bulk of space in educational specifications for an educational facility will be devoted to the details concerning the educational



program of the school in question. Too often, however, the focus of attention is on the population characteristics and the financial aspects. It is suggested here that the focus be changed to concentrate on the program, particularly the kinds of activities which will take place in each of the spaces needed.

Once it has been decided what kinds of educational and co-curricular (enrichment, recreation, and hobby) experiences will be provided during each school day, decisions must be made as to the frequency, duration and percent of each time module ("class" period) which will be devoted to each of the activities in the program. This information, together with data concerning the size of each group, can then be the basis for determining the number of spaces needed for each activity, and kinds of spaces needed in each instructional area. A formula often used in calculating the number of spaces for a class or activity during the time (month, semester, or year) allotted for the activity is as follows:

$$\text{No. of Spaces} = \frac{A}{B} \times \frac{C}{D} \times \frac{1}{E}$$

Where A = Total number of pupils taking a course or meeting for a class (or activity)

B = Class Size
C = Number of time modules the class will meet in a week
D = Total number of time modules in the weekly school schedule
E = Utilization factor (Dependent upon the school size, grade organization, and scheduled use of the instructional space — see School Capacity bulletin.)

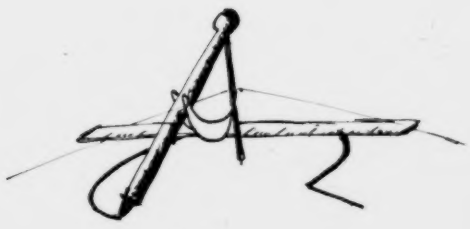
Particular emphasis needs to be given to unique teaching-learning methods and educational technology proposed for use in the school. Terms must be clear to the architect; educational jargon should be avoided. It is important that the educational concepts to be considered are clearly stated so all can understand.

AUXILIARY SERVICES

Other areas requiring definition and descriptions of activities are those to be used by the administration, school nurse, guidance personnel, faculty, media specialists, special services personnel (e.g. speech therapist, social worker, and psychologist), and the kitchen staff. Activities of the clerical staff and custodial and maintenance personnel must also be considered.

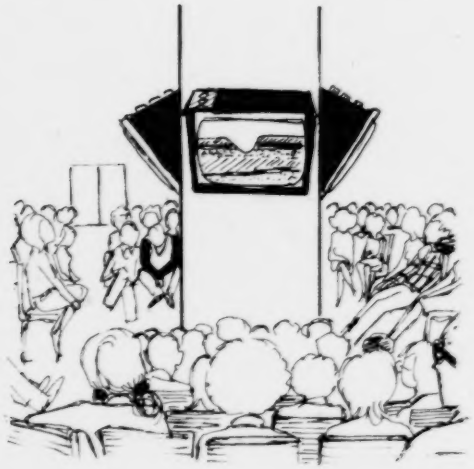
The number and kinds of spaces is calculated according to the number of persons involved and the kinds of activities which will take place in each area.

PHYSICAL FEATURES OF BUILDINGS AND SITES



Without being too specific, to the point of restricting the architect's creativity, some statements should be included regarding special physical features which should be considered by the architect. Nothing should be left to chance; at the same time, nothing should be specified in such a way that the architect will be unable to utilize his creative skills in architectural design and aesthetics. The approximate size of each area can be stated without specifying actual dimensions. (Dimensions should be mentioned only where unique and/or extremely critical.) Locations of spaces should be specified only with regard to orientation to other spaces in and around the school building and site.

As for ceiling height, lighting, ventilation, furniture, equipment, utilities, acoustical treatment, temperature and humitidy control, color, floor material, inter-communication terminals, audio and



video reception, and electronic data retrieval, an architect should know the usual requirements for each instructional and ancillary space. Nevertheless, to be on the safe side unique features should be spelled out in the educational specifications for each space of the building to ensure their inclusion.

As for aesthetic features and provisions for the general health, safety, comfort and enjoyment of the building's occupants, only features not normally found in schools need be specified. A general statement referring to acceptable standards of the day (e.g., State guidelines) should be sufficient. A general statement will normally also suffice, as a reminder to the architect, with regard to designing the building for efficiency of operation and ease of maintenance.

FUTURE EXPANSIONS ADAPTABILITY, AND FLEXIBILITY OF SPACE

A statement regarding pupil population growth should be included if additional capacity will be needed at this location in the future. The educational leaders of the school district should also incorporate into the educational specifications anticipated changes in the teaching-learning process so that

sufficient adaptibility and flexibility can be incorporated into the architect's design of the building.

PARTICIPANTS IN DEVELOPING EDUCATIONAL SPECIFICATIONS

In writing educational specifications for a specific building project it is important that all interested parties be given the opportunity to provide input into their development. The board of education must adopt the essential policies governing the educational program and provide the administration with accurate information regarding interest and aspirations for the educational system. The Board also must give final approval to the educational specifications, as well as employ consultants (if needed) and an architect, charging him with the responsibilities connected with the design and construction of the facility. Citizens groups can also be helpful in defining community goals and aspirations, and interpreting the educational program to the public.

The school administration (school principal as well as central office administration) has the primary responsibility for defining the pupil population for the school building in question, and composing, editing and printing the educational specifications

after the staff and the other interested parties have finished their work. The superintendent of schools and his administrative staff must provide the proper leadership in their development as well as make the various assignments, organize the various groups to be involved, evaluate progress, evaluate the completed document and interpret the educational specifications to the Board of Education, architect and community. The principal of the school in question should organize the teaching staff and students in developing descriptions of the various areas to be covered by the educational specifications, and evaluate progress and the completed sections to go into the document.

Teachers have the responsibilities, under the direction and leadership of the school administration, to describe the curricular and co-curricular activities, schedule of classes, numbers of spaces needed, space characteristics, furniture, equipment, instructional aids, pupil groupings, and relationships to other spaces for each instructional and ancillary area of the new building (as well as areas in an existing building to be altered).

Outside consultants (State Department of Education and college or university personnel experienced in school plant planning, and independent professionals) can be helpful in assisting the central administration in defining the population (particularly future enrollments), and counseling with teachers regarding the educational program and space needs for various educational experiences. Equipment specialists can assist in determining equipment needs for the various areas of the building.

The student body can provide valuable insight into the utility and comfort of various building characteristics as well as aspirations and program features.

Finally, an architect and his associate engineers can serve as advisors to all participating groups with regard to technical, aesthetic and cost considerations after the program has been defined and consideration begins regarding physical features and future expansions.

CHECK LIST

In summary, to avoid overlooking any necessary part of the development of useful educational specifications the following check list is provided:

____1. *Citizens committee organized.*
____2. *Community goals and aspirations identified.*
____3. *Community's ability to finance building program determined.*
____4. *Census (school age and pre-school) completed.*
____5. *Enrollment projection completed.*
____6. *Consultant employed.*
____7. *Pupil population characteristics determined.*
____8. *Number of administrators and staff determined.*
____9. *Students' report regarding environment and aspirations completed.*
___10. *Teachers' reports regarding programs, spaces and equipment needs completed.*
___11. *Final editing completed.*
___12. *Board of Education formal approval.*

The suggested outline on pages 2-5 can be used as a check list regarding the <u>content</u> of educational specifications.

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